

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Bernd Kiessling et al.  
Serial No: 09/673,986 Art Unit: 2877  
Filing Date: October 23, 2000  
Title: CONTACTLESS MEASUREMENT OF WALL THICKNESS  
Examiner:

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March 28, 2001

POH211ID

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR § 1.97.

Hon. Commissioner of Patents and Trademarks  
Washington, D.C. 20231

SIR:

Submitted herewith are copies of patents and documents relevant to the above captioned invention.

Applicant is respectfully submitting the additional reference cited in the Search Report filed with the "Information Disclosure Statement" on October 23, 2000.

1. We wish to make of record the certain citations listed in the Search Report in accordance with 37 CFR 1.97.

2. The relevance of each listed item with regard to the different claims of the above-identified application according to the opinion of the Search Authority, is indicated in the Search Report

by reference to certain categories which are explained on the Report sheet of in MPEP on page 188 - 55, resp. <X>

3. The claims as filed in the above-identified

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U.S. patent application correspond to                    < >  
are different from    <X>  
the claims for which the Search Report has been established.

4. Copy of the following reference cited in the  
Search Report is enclosed herewith:

DE-4143186  
US-5636027  
JP-58022902 - ABSTRACT  
DE-3724932  
EP-05846732

5. English translations of pertinent portions of  
any non-English references are enclosed herewith, if such  
translation is readily available.

Submitted herewith are copies of patents and  
documents relevant to the above captioned invention.

Country:	Doc.number:	Class:	Relevant Date:
US	6133999		October 17, 2000

B.Kiessling, Non-contact thickness gauges results ....;  
International Glass Journal (1999) No 103; pages 39-44.

B. Kiessling et al. SKIZZEN; 1 page of explanation and 3  
sheets of drawings.

B.Kiessling, Non-contact thickness sensor for containers;  
GLASS, page 156, June 2000.

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Non-contact sickness sensor; Glass machinery & accesories  
2/2000, page 38.

VMA NON-CONTACT THICKNESS SENSOR FOR CONTAINER GLASS;  
INTERNATIONAL GLASS JOURNAL, 2000, No 109, page 67

Beruehrungslose Dickenmessung stzt sich bei Behaelterglass  
durch; Glass-Ingenieur; 6 - 2000, page 58.

Patrick Schwarzkopf; Scherben brigen selten Glueck; VDMA  
Nachrichten; 01 - 01; Page 50

Letter to European Patent Office dated April 28, 2000;  
7 pages

This statement, together with the accompanying  
INFORMATION DISCLOSURE CITATION is provided to inform the  
U.S. Patent and Trademark Office of known art. In view of  
the many possibilities in which references can form a basis  
for a combination of references possibly alleged to be a  
basis for an obviousness type rejection in an Office Action,  
it is deemed to be virtually impossible for an applicant to  
recite references for each and every element forming part of  
a claim and, furthermore, in view of an unknown individual  
element identity precision versus state of the art, elements  
with some difference in element identity.

The regulations in 37 CFR 1.98(3) require that  
applicants must provide a concise explanation of the

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relevance, as it is presently understood by the individual most knowledgeable about the content of the information, of each patent, publication, or other information listed that is not in the English language.

Claim 1 of the present application requires that the light of an illuminating surface (11) and that the light from a second illuminating surface (21) be employed for contactless measurement of the wall thickness of a transparent object. The reference German printed patent document DE 4143186 A1 teaches a device for the contactless automatic measurement of the thickness of transparent materials. The reference employs two laser light sources 1a and 1b. The presence of two light sources appears to be a common feature of claim 1 and of the reference German printed patent document DE 4143186 a1.

The United States patent 5,636,027 to Spengler et al. teaches an apparatus for making contactless measurements of the thickness of an object made of transparent material. Column 3 lines 40 and 41 state that reference numerals 10 and 20 identify the first and second radiation sources, lasers in this case.

Claim 1 of the present application requires that light from an illuminating surface (11) be collimated and

that light from a second illuminating surface (21) be collimated. The presence of two light sources in the reference and in claim 1 of the present application are deemed to present a relationship between claim one of the present application and the reference United States patent 5,636,027.

The publication No. 58022902 of the patent abstracts of Japan teaches that light is separated into two directions by a beam splitter 8, and is reflected by half mirrors 9,9' so as to be irradiated from symmetrical directions against the thickness measuring part of the TV panel 1.

Claim one of the present application requires that the direction toward the surface of the object to be measured (1) corresponds to the accent direction of the light from the illuminating surface (11). It appears that the irradiation from some symmetrical directions in the reference is related to the situation of claim 1 where the direction toward the surface of the object to be measured (1) corresponds to the accent direction of the light from the illuminating surface (11).

The reference German printed patent document DE 372493 to A1 teaches to employ a light source 2 for coherent optical radiation. The interference lines are captured by a

sensor, wherein the contents of the sensor is read by evaluation electronics 6.

Claim one of the present application requires that the light from the illuminating surface (11) is focused on to the surface of the object to be measured (1) and that light received by a sensor is evaluated as a measure of the wall thickness in the following disposed controller (3). But it appears to be common to the reference and that claim 1 of the present application that light from a light source is placed on to a measurement surface and then evaluated by a controller.

The European patent application, application No. 93112996.9 teaches a lens (40) disposed between a linear array light sensor (42) and the container side wall (14), which lens focuses light energy reflected from the outer and in a side wall surfaces on to the sensor.

Claim two of the present application requires that the objective (24) is disposed such that the objective (24) together with the lens (25) images of the beams reflected at the object to be measured on to the sensor (26). The positioning of a lens between the object to be measured and the sensor appears to be a common feature of the European patent application and of claim 2 of the instant

application.

The United States patent 6,133,999 to Myers et al. teaches the measuring of a side wall thickness of glass containers. Light from a light source (30) is directed to the side wall of a container, then focused with a lens (41) and received by camera (32).

Claim two of the present application requires the presence of an objective (24) together with a lens (25) which images the beams reflected at the object to be measured on to the sensor (26). It appears that there is a relationship in that the reference United States patent 6,133,999 and claim two of the present application provides that light coming from an object be focused with a lens on to a sensor.

The International Glass Journal article "Non-contact thickness gauges results: applications at container glass, tableware, two and float glass production" by B. Kiessling. Figure 2 of the reference shows that two opposite being directions compensate measuring errors. The situation of figure 2 of the reference with the two opposite being directions appears to be related to the requirement of claim one of the instant application that the direction toward the surface of the object to be measured (1) corresponds to the

exit direction of the light from the illuminating face (11).

The journal "Glass" in June 2000, p. 156 teaches a noncontact thickness sensor for containers. It appears that the reference relates to a similar apparatus as the preceding reference to B. Kiessling.

The journal "Glass machinery plants & accessories", year 2000, issue 2, p. 38 teaches a noncontact thickness sensor. The thickness measurement is based on the reflections of light lines which are projected onto the surface of the container to be measured. Claim one of the instant application requires the presence of a first illuminating surface (11) and of a second illuminating surface (21). Thus it appears that the employment of a plurality of light beams is a common feature of the reference and of claim one of the instant application.

The reference international glass journal (2000) No. 109, p. 67 teaches a noncontact thickness sensor for container glass. According to the reference the reflections of light lines which are projected onto the surface of the container to be measured. Claim one of the instant application requires the presence of a first illuminating surface (11) and over second illuminating surface (21). It is believed that the measurement of reflections of light



lines and the employment of two illuminating surfaces are feature connecting the reference and claim 1 of the instant application.

The journal Glass-Ingenieur year 2000, issue 6, p. 58 teaches contact less thickness measurement in connection with container glass. The reference teaches that four sensors are disposed on top of each other. Claim one of the present application provides for a presence of two opto-electronic image resolving sensors. The presence of a plurality of sensors appears to be a common feature of the reference and of claim one of the instant application.

A reference entitled "Scherben bringen selten Glueck" (broken fragments rarely bring luck) reports new technologies for wall thickness measurements of container glass. The reference projects light lines onto the container surface. The reflexes of the light lines at the inner side and the outer side of the container wall are imaged onto opto-electronic line sensors. Claim one requires a first illuminating surface (11) and a second illuminating surface (21) as well as a presence of two opto electronic image resolving sensors. Therefore it appears that the reference and claim one of the instant application have certain components in common.

The present submission was not made at an earlier date, since the information submitted was not available to the attorney about the time of filing of the application or at the time of the filing of a first information disclosure statement, as the case may be. The attorney endeavors to notify the applicants about the requirements of the United States Patent and Trademark Office relating to submission of prior art and, upon receipt of such information, it is submitted to the United States Patent and Trademark Office with reasonable promptness as the attorney case load allows.

In view of holdings of attorneys as being grossly negligent in not submitting certain documents in prior holdings of the U.S. Patent and Trademark Office, it is believed that the art submitted now would raise in view of standards applied in said holdings of gross negligence of attorneys a serious questions as to the patentability of the claim subject matter.

While the attorney does not have any certainty as to how and under which circumstances this art became known to the applicants, most of such references during the later stages of a patent prosecution have generally been cited in the course of foreign examining procedures by foreign examiners considering patentability of an equivalent or

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corresponding foreign application. If there should be a specific interest on the side of the United States Patent and Trademark Office as to how and under which circumstances individual references became known to the applicants, then the applicants are ready to provide additional information as to specific details relating to the circumstances of the discovery of individual references as requested by the United States Patent and Trademark Office.

The above recited references taken alone or in combination are believed neither to anticipate or to render obvious the present application.

Consideration of the reference document during the examination of the present application is respectfully requested.

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